Audit of Forest Planning and Practices
Dunkley Lumber Ltd.
Tree Farm Licence 53

FPB/ARC/58

October 2003

104-02531/

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Report from the Board

A. Report from the Board

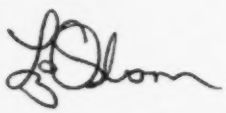
This is the Board's report on a compliance audit of Tree Farm Licence (TFL) 53, held by Dunkley Lumber Ltd. (Dunkley).

The operating location for TFL 53 is within the Prince George Forest District, about 40 kilometres north of Quesnel, in gently rolling terrain with poorly defined drainages. The TFL has been hit with mountain pine beetle infestations of epidemic proportions over the past three years. On May 30, 2003, the deputy chief forester more than doubled Dunkley's allowable annual cut with the specific intent of allowing Dunkley to continue to manage the beetle population.

The report from the auditor (Part C) provides further details on the location of the TFL, the scope of the audit and the audit findings. The report from the auditor is based on the audit procedures described in Part B.[1] The audit examined Dunkley's operational planning; timber harvesting; road construction, maintenance and deactivation; silviculture; and planning for fire protection for the period from June 1, 2002, to June 20, 2003.

The Board considered the report from the auditor, along with supporting audit evidence and explanations. The Board affirms the auditor's findings and opinion. Dunkley' forest planning and practices complied with Code requirements in all significant respects.

Particularly noteworthy is Dunkley's rehabilitation of roads within cutblocks, and Dunkley's efforts to control the mountain pine beetle epidemic. The Board recognizes the intense efforts Dunkley has made to manage resources in the TFL, and commends Dunkley for its dedication and focus in maintaining forest values while minimizing timber losses.



Liz Osborn, MRM, MSc
A/Chair, Forest Practices Board

October 16, 2003

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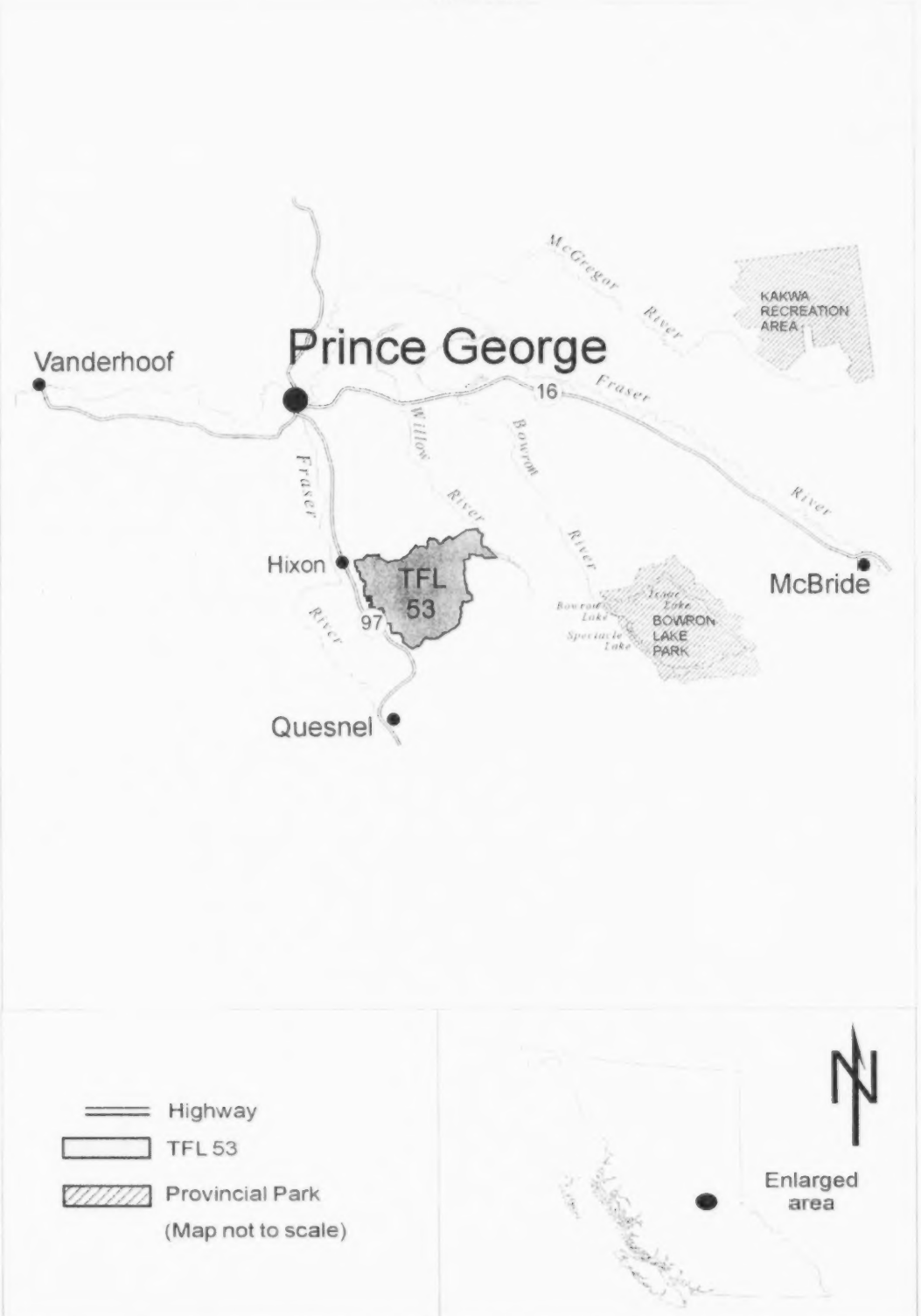
[1] Part B of this document provides background information on the Board's audit program and the process followed by the Board in preparing its report.

Audit of
Dunkley Lumber Ltd.
TFL 53



Forest Practices Board Compliance Audit Process

B. Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government and agreement-holders for compliance with the *Forest Practices Code of British Columbia Act* and regulations (the Code). The Board has the authority to conduct these periodic independent audits under section 176 of the *Forest Practices Code of British Columbia Act*. Compliance audits examine forest planning and practices to determine whether or not they meet Code requirements.

Audit Standards

Audits by the Forest Practices Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with generally accepted auditing standards.

The audits determine compliance with the Code based on criteria derived from the *Forest Practices Code of British Columbia Act* and its related regulations. Audit criteria are established for the evaluation or measurement of each practice regulated by the Code. The criteria reflect judgments about the level of performance that constitutes compliance with each requirement.

The standards and procedures for compliance audits are described in the Board's Compliance Audit Reference Manual.

Audit Process

Conducting an Area-Based Audit

Once the Board selects the area to be audited, the audit period and the staff and resources required to conduct the audit are determined. Board staff meet with the parties in the area being audited to discuss the logistics of the audit before commencing the work. The parties involved could be forest companies, oil and gas companies, woodlot owners or ranchers.

All the activities carried out during the period subject to audit are identified; for example, harvesting or replanting sites, and constructing or deactivating road sections. The items that make up each forest or range activity are referred to as a "population." For example, all sites harvested by a specific licensee form the "timber harvesting population" for that licensee. All road sections constructed by a specific licensee form the "road construction population" for that licensee. The populations are then sub-divided based on factors such as characteristics of the sites and potential severity of the consequences of non-compliance on the sites.

For each population of each licensee, the auditors choose the most efficient means of obtaining information to conclude whether there is compliance with the Code. For efficiency, auditors usually rely upon sampling to obtain audit evidence, rather than inspecting all activities.

Individual sites and forest or range practices within each population have different characteristics, such as the type of terrain, type of yarding or grazing levels. Each population for each licensee is divided into distinct sub-populations on the basis of common characteristics (e.g., steep ground vs. flat ground). A separate sample is selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to the sub-population where the risk of non-compliance is greater.

Audit work in the field includes assessments from the air using helicopters and ground procedures, such as measuring specific features like road or riparian reserve zone width. The audit teams generally spend one to three weeks in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of the Code is more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board.

Auditors collect, analyze, interpret and document information to determine the audit results. The audit team, composed of professionals and technical experts, first determines whether forest practices are in compliance with Code requirements. For those practices considered to not be in compliance, the audit team then evaluates the degree to which the practices are judged not in compliance. The significance of the non-compliance is determined based on a number of criteria, including the magnitude of the event, the frequency of its occurrence and the severity of the consequences.

As part of the assessment process, auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet Code requirements.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that a non-compliance event, or the accumulation and consequences of a number of non-compliance events, is not significant and is not considered worthy of reporting.

Significant non-compliance – where the auditor determines that the event or condition, or the accumulation and consequences of a number of non-compliance events or conditions, is or has the potential to be significant, and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred, or is beginning to occur, to persons or the environment as a result of the non-compliance. A significant breach can also result from the cumulative effect of a number of non-compliance events or conditions.

Identification of a possible significant breach requires the auditor to conduct tests to confirm whether or not there has been a breach. If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Ministers of Forests, Energy and Mines, and Water, Land and Air Protection.

Reporting

Based on the above evaluation, the auditor then prepares the "Report from the Auditor" for submission to the Board. The parties being audited are given a draft of their portion of the report before it is submitted to the Board so that the party is fully aware of the findings. The auditee is also kept fully informed of the audit findings throughout the process, and is given opportunities to provide additional relevant information and to ensure the auditor has complete and correct information.

Once the auditor submits the report, the Board reviews it and determines if the audit findings may adversely affect any party or person. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report to the public and government. The representations allow parties that may potentially be adversely affected to present their views to the Board.

At the discretion of the Board, representations may be written or oral. The Board will generally decide on written representations, unless the circumstances strongly support the need for an oral hearing.

The Board then reviews the report from the auditor for each auditee and the representations from parties that may potentially be adversely affected before preparing its final report, which includes the Board's conclusions and, if appropriate, recommendations.

If the Board's conclusions or recommendations result in newly adversely-affected parties or persons, additional offers of representations would be required.

Once the representations have been completed, the reports are finalized and released: first to the respective auditees and then to the public and government.

Report from the Auditor

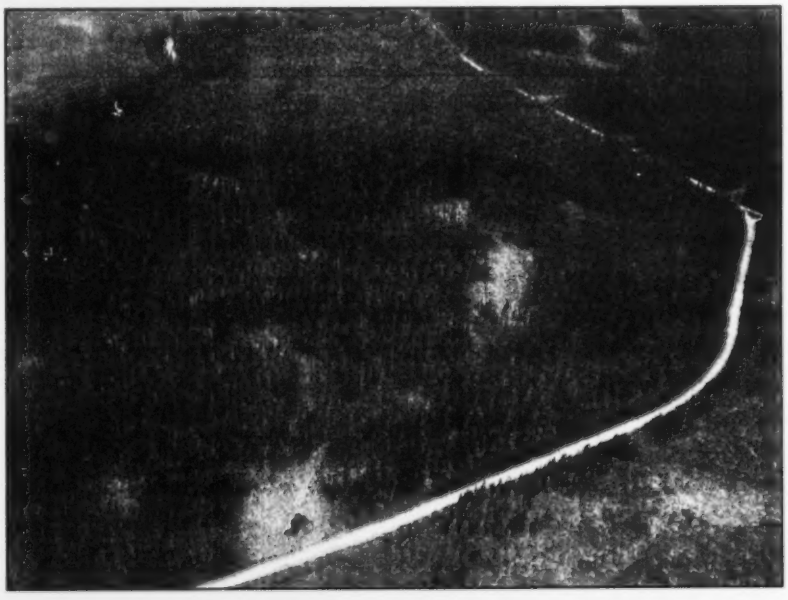
C. Report from the Auditor

1.0 Introduction

As part of the Forest Practices Board's 2003 compliance audit program, Tree Farm Licence (TFL) 53 was selected for audit from the population of major forest licences within the Northern Interior Forest Region. The licence, held by Dunkley Lumber Ltd. (Dunkley), was selected randomly and not on the basis of location or level of performance.

TFL 53 is an area-based licence, consisting of about 88,000 hectares, located within the Prince George Forest District. The allowable annual cut (AAC) for the licence was 210,880 cubic metres until May of 2003. An additional 28,620 cubic metres was allocated to the Ministry of Forests' BC Timber Sales Program (formerly the Small Business Forest Enterprise Program). The estimated harvest during the audit period was 340,000 cubic metres.

Dunkley's operations are centered near the community of Hixon, about 40 kilometres north of Quesnel (see map on page A-2). The terrain is generally rolling, with poorly defined drainages for most of the licence area except for main rivers and creeks. The terrain is generally a low risk for landslides, but in areas of sensitive soils, harvesting is restricted to cold winter or dry summer conditions.



Certification status

Dunkley Lumber Ltd.'s woodland operations under TFL 53 are certified under the International Organization for Standardization (ISO) 14001.[1] When auditing certified companies, it is Board policy to place some reliance on the work of the licensee's external verification auditors, where possible, to reduce the extent of field testing required. This approach can reduce the cost of the audit without compromising audit standards.

Dunkley and its external verification auditors granted the Board auditors permission to review the ISO audit working papers. However, after reviewing the ISO audit working papers, the

Board auditors determined that the ISO audit examined different components of environmental management practices than a standard Board audit examines. In this case the auditors determined that it would be more cost effective to conduct a standard Board compliance audit and not place reliance on the external auditors work.

Forest Health Concerns

Mountain pine beetle infestations in portions of the Prince George Forest District are currently at epidemic levels. In the last three years, the harvest levels of beetle-attacked timber in the TFL have risen dramatically: 28,000 cubic metres in 2000/2001; 113,000 in 2001/2002; and 290,000 in 2002/2003. On May 30, 2003, the deputy chief forester increased the total AAC to 500,000 cubic metres to address the significant increase in beetle attacked timber in the TFL. The purpose of the increase in cut is to enable Dunkley to continue to control the beetle population and minimize timber losses.

Spruce bark beetle is at endemic (low or static) levels. However, each year there is blowdown in spruce-leading stands, often associated with previously harvested areas. These blowdown patches are monitored closely and harvested each year to recover timber that might otherwise be lost, and to ensure that spruce bark beetle populations do not increase.

Higher Level Plans

Higher level plans[ii] that provide direction to Dunkley are limited to objectives for five recreation sites in the TFL. For each recreation site, the objectives establish requirements for the type of recreation experience and activities, access and site maintenance.

Further guidance for managing the TFL is provided by the Prince George Land and Resource Management Plan (LRMP), approved by government in 1999. The LRMP establishes general objectives for water, fish, wildlife, biodiversity and cultural values in the overall area of the plan. In addition, the LRMP designates the TFL as a resource management zone that provides more specific guidelines for certain wildlife and tree species, including grizzly bear, moose, marten and Douglas fir. Since the LRMP has not been declared a higher level plan under the Forest Practices Code, compliance with this plan is not a legal requirement.

In the Prince George Forest District, landscape-level planning has not progressed beyond establishing draft landscape unit boundaries. The TFL consists of one draft landscape unit.

2.0 Audit Scope

The audit examined Dunkley's planning, field activities and obligations in the areas of operational planning (including forest development plans[iii] and silviculture prescriptions[iv]) timber harvesting; road construction, maintenance and deactivation; silviculture; and fire protection. These activities were assessed for compliance with the *Forest Practices Code of British Columbia Act* and related regulations (the Code).

All activities, planning and obligations for the period June 1, 2002, to June 20, 2003, were included in the scope of the audit.

The activities and obligations carried out by Dunkley during the audit period, and therefore subject to the audit, were:

- harvesting of 30 cutblocks, plus harvesting of 1,758 beetle infested units under the authority of the *Bark Beetle Regulation*
- layout and design of 59 road sections totalling 120.2 kilometres
- construction of 23 road sections totalling 56.7 kilometres
- maintenance of approximately 355 kilometres of road, involving activities such as road surfacing and cleaning culverts and ditches
- construction of 6 bridges and maintenance of 27 bridges
- deactivation of 16.7 kilometres of roads
- site preparation for tree planting on 12 cutblocks
- tree planting on 48 cutblocks, plus planting on 162 units that were harvested under the authority of the *Bark Beetle Regulation*
- manual brushing on 3 cutblocks and chemical brushing on 2 cutblocks
- regeneration obligations on 29 cutblocks and free-growing obligations on 34 cutblocks
- fire-protection planning and infrastructure

Licence activities in the audit period were approved under the 2000 forest development plan and subsequent amendments.

Section 3 describes the audit of these activities, and the results. The Board's audit reference manual, *Compliance Audit Reference Manual, Version 6.0, May 2003*, sets out the standards and procedures that were used for this audit.

3.0 Audit Findings

Planning and Practices Examined

The audit work on selected roads and cutblocks included ground-based procedures and assessments from the air using helicopters. The audit examined:

- harvesting of 11 cutblocks, plus harvesting of 65 beetle infested units under the authority of the *Bark Beetle Regulation*
- construction of 8 road sections totalling 19.1 kilometres
- maintenance of approximately 174 kilometres of road

- deactivation of roads totalling 4.7 kilometres
- construction of 5 bridges and maintenance of 10 bridges
- site preparation for tree planting on 3 cutblocks
- tree planting on 7 cutblocks, plus planting on 8 units that were harvested under the authority of the *Bark Beetle Regulation*
- manual brushing on 1 cutblock and chemical brushing on 1 cutblock
- regeneration obligations on 4 cutblocks, and free-growing obligations on 10 cutblocks
- fire-protection planning and infrastructure

Because there were no active harvesting or road operations underway during the audit, it was not possible to examine Dunkley's compliance with Code requirements for firefighting tools and equipment.

Overall Findings

The audit found that Dunkley was in compliance, in all significant respects, with the Code's planning and practices requirements for operational planning; harvesting; road construction, maintenance and deactivation; silviculture; and fire-protection planning and infrastructure. The instances of non-compliance were very few and inconsequential.

Operational Planning

The audit assessed the 2000 forest development plan and subsequent amendments to ensure consistency with higher level plans and the LRMP, that sufficient information was provided to interested publics, and that major amendments were appropriately approved.

The audit found that actions proposed in the forest development plan were consistent with LRMP objectives, including those applicable to the TFL resource management zone. In addition, the audit found that forest practices during the audit period were consistent with the objectives for the five recreation sites in the TFL. Although no members of the public attended opportunities to view the forest development plan or amendments, the audit found that the licensee met the content and review process requirements for a forest development plan.

Bark Beetle Regulation

Most of the harvesting during the audit period was focused on mountain pine beetle control and was conducted under the *Bark Beetle Regulation*. The TFL area is located within the provincial emergency bark beetle management area and is designated an "aggressive" emergency management unit, in which all forest health treatments—including harvesting—may be used to control the infestation.

Under the regulation, the district manager may exempt the licensee from most operational planning requirements, such as providing maps and schedules in forest development plans and preparing site plans.[v] Harvest operations under the regulation are restricted to trees

infested with bark beetles, plus those trees that must be removed to reach infested trees. In addition, no more than 5,000 cubic metres may be removed from an individual infested area, and any resulting opening may not exceed 15 hectares—including adjoining openings. Licensees are obligated to report areas harvested under the regulation in map form to the district manager by May 31st each year.

The audit examined forest practice activities, and determined that the operations conformed to the requirements of the regulation.

4.0 Other Comments

TFL 53 supplies only about 30 percent of Dunkley's log supply for its sawmill. The company has two small non-replaceable forest tenures in addition to the TFL. The remaining 60 to 70 percent of their timber supply must be purchased on the open market, mainly from the Ministry of Forest's BC Timber Sales Program. Consequently, Dunkley has adopted a management approach for the TFL in which timber and soil resources are carefully conserved. The audit found two practices that stand out as noteworthy.

Road Rehabilitation Practices

The Code contains numerous measures designed to conserve soil resources. For example, licensees are obliged to limit the amount of land taken out of tree production for permanent access structures such as main access roads and gravel pits. Also, roads and landings that are needed during harvesting but not afterwards—classified as temporary access structures—must be rehabilitated. This rehabilitation consists of stabilization measures, decompacting landings, respreading soil over the surface areas, re-establishing surface drainage patterns and revegetating exposed mineral soil. These measures are intended to minimize erosion and restore soil productivity. Similar rehabilitation measures are required for excavated and bladed skid trails used for harvesting.

According to the Prince George Forest District, permanent access structures in the district occupy an average of four to five percent of cutblock areas. In TFL 53, there is a very low proportion of in-block land devoted to permanent access structures. In the last two years the amount contained in approved silviculture prescriptions has ranged between 0.3 and 0.7 percent. This is far less than the seven percent limit prescribed by district policy and significantly less than the average amount in the district.

Dunkley achieves this by rehabilitating most in-block roads, including those that have been gravelled and contain fine textured soils, which do not require rehabilitation under district policy. Furthermore, rehabilitation of in-block roads has been ongoing for several years in the TFL, and Dunkley's own studies indicate that, overall, rehabilitated sites are achieving 90 percent of the tree growth of undisturbed sites. Thus, Dunkley has been restoring a greater proportion of land to a tree-producing state than required, and to a level that distinguishes them. This practice is commendable.

Forest Health Practices

There has been a rapid increase in mountain pine beetle-attacked stands in the TFL in the last several years. In the fall of 2002, the company identified more than 3,280 infestation sources, first by aerial reconnaissance, then by ground detection. They harvested more than 1,750 of these infestations, essentially all under the *Bark Beetle Regulation*, between January and mid-March 2003. An additional 300 of the 3,280 infestation sites were also harvested in the same period under the Small Business Forest Enterprise Program, but were not part of this audit.

The average size of these openings is less than one hectare. The total volume harvested from the 1,750 openings was about 230,000 cubic metres, of which 70,000 cubic metres was harvested by helicopter and the rest by ground-based equipment. About 670 of the harvested openings are smaller than 0.3 hectares (about 50 by 60 metres in size). Dunkley has already planted 162 of the openings greater than 0.3 hectares in size.

Dunkley has been very aggressive in taking this focused beetle harvest approach to manage the beetle infestation. While the approach is by no means unique, the degree to which Dunkley has used it by concentrating most of the TFL harvesting specifically on infested patches is noteworthy. With this approach, Dunkley has, to date, been successful in reducing the rate of spread of beetles in susceptible timber in the TFL and minimizing timber losses. The beetle management practices employed by Dunkley are commendable.

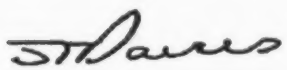
5.0 Audit Opinion

In my opinion, the operational planning; timber harvesting; road construction, maintenance and deactivation; silviculture and fire-protection planning activities of Dunkley Lumber Ltd. on Tree Farm Licence 53, from June 1, 2002, to June 20, 2003, were in compliance, in all significant respects, with the requirements of the Code as of June 2003. No opinion is provided on fire protection activities in the field because operations were inactive during the audit.

In reference to compliance, the term "in all significant respects" recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

Without qualifying my opinion, I draw attention to Section 4 of this report, which describes Dunkley Lumber Ltd.'s road rehabilitation and forest health practices on Tree Farm Licence 53. These practices are of positive significance and are worthy of specific mention in this report.

Sections 2 and 3 of this Report from the Auditor describe the basis of the audit work performed in reaching this opinion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with the Code.



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September 8, 2003

[i] The International Organization for Standardization (ISO) is a non-governmental worldwide federation of national standards bodies. ISO 14001 is the international standard defining the organizational structure, responsibilities, procedures, processes and resources required in implementing environmental management systems. It does not specify environmental performance criteria, but provides a framework for an organization to set the criteria together with objectives and targets plus auditing and reporting systems. Undertaking independent certification under ISO 14001 is voluntary.

[ii] A higher level plan is a forest resource management objective that is established as legally binding by a written order. The objective applies to a resource management zone, landscape unit, sensitive area, recreation site, recreation trail, or interpretive forest site. Higher level plans are a provision of the *Forest Practices Code of British Columbia Act* that give direction to operational plans.

[iii] A forest development plan is an operational plan that provides the public and government agencies with information about the location of proposed roads and cutblocks for harvesting timber over a period of at least five years. The plan must specify measures that will be carried out to protect certain forest resources prescribed by regulation. It must also be consistent with any higher level plans. Site-specific plans are required to be consistent with the forest development plan.

[iv] A silviculture prescription is a site-specific operational plan that describes the forest management objectives for an area to be harvested (a cutblock). The silviculture prescriptions examined in the audit are required to describe the management activities proposed to maintain the inherent productivity of the site, accommodate all resource values including biological diversity, and produce a free-growing stand capable of meeting stated management objectives. Silviculture prescriptions must be consistent with forest development plans that encompass the area to which the prescription applies.

[v] A site plan is a site-specific plan that is required in place of a silviculture prescription as of December 17, 2002, except where there is already an existing silviculture prescription. The site plan contains many of the same elements as a silviculture prescription and is designed to identify resource values and define what a free-growing stand will be on that site. However, it is not an operational plan under the Code and does not require review or approval by government to be implemented.

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